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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/333,825	06/15/1999	PHILIP KOSSIN	KOS 0001P	4592

31718 7590 02/26/2004

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EXAMINER

MISLEH, JUSTIN P

ART UNIT	PAPER NUMBER
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2612

11

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



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Office Action Summary

Application No.

09/333,825

Applicant(s)

KOSSIN, PHILIP

Examiner

Justin P Misleh

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003 and 20 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42 - 56 is/are allowed.
- 6) ☒ Claim(s) 1 - 5, 7, 14 - 25, 27, 32, and 33 - 38 is/are rejected.
- 7) ☒ Claim(s) 6, 8 - 13, 26, 28 - 31, 39 - 41, 57, and 58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 18 August 2003 have been fully considered but they are not persuasive.
2. Regarding items 1 and 2 of the Applicant's arguments, the objections to the specification made in the Non-Final Office Action (Paper No. 4, 21 May 2003) still stand, as further explained below.
3. Regarding item 4, the Examiner approves of the Applicant's amendments to Claim 33 to overcome the 35 U.S.C. 112, 2nd paragraph, rejection made in the Non-Final Office Action. The Examiner now withdraws the 35 U.S.C. 112, 2nd paragraph, rejection of Claim 33.
4. Regarding the Applicant's arguments against Kamata et al., which are located in item 6, the Applicant argues against Kamata et al. on the basis that that case in Kamata et al. is not "hermetically sealed". The Applicant states that the specific meaning of "hermetically sealed" is defined in the specification on pages 9 and 10. In reference to pages 9 and 10 of the specification, the Applicant contends that the dictionary definition of "hermetically sealed" is necessary and sufficient for the present invention. According to the Applicant, "airtight" and "immune to external influence" are both dictionary definitions of "hermetic". The Examiner agrees with the Applicant regarding the definition of "hermetically sealed". Also the Applicant argues that the case of Kamata et al. is openable and has a hinge, and the camera can be inserted into it and removed from the case at will.

Granted that the case of Kamata et al. is openable, however, that does not negate the fact that the case Kamata et al. is "hermetically sealed". The case of Kamata et al. is a waterproof case for a camera, as stated by the title. Since water is composed of air molecules as well as hydrogen molecules, the case of Kamata et al. is inherently airtight, hence, it is not explicitly stated. So, if the case is watertight, it is also airtight and vice versa. Regarding the requirements of amended Claim 1, "an enclosure hermetically sealing water and air tight both digital electronic camera and the converter" is required. The case of Kamata et al. is both watertight and airtight, as demonstrated above, thus, meets that requirement of Claim 1. In addition Kamata et al., for the sake of explanation, essentially has two modes of operation. The first mode of operation is when the case is not in use and is openable and the camera is accessed. The second mode of operation is when the case is in use and is waterproof. In the second mode of operation, the case must be "hermetically sealed"; otherwise, the camera and the remaining contents of the case would be destroyed. These same arguments are applied to Claim 21.

Additionally, for reference purposes, the Examiner directs the Applicant to US Patent No. 5,107,286 (herein referred to as '286) and 4,977,418 (herein referred to as '418). Both of these references disclose a hermetically sealed case for a camera that can be opened in a fashion similar to Kamata et al. For the '286 Patent, please see column 4 (lines 20 – 26) and for the '418 Patent, please see column 5 (lines 62 – 68). Claims 1 and 21 in no way require that the case cannot be opened or that the camera cannot be accessed, Claims 1 and 21 do require a hermetically sealed housing, which has been shown to be accomplished with cases that can be openable and cameras accessible.

Finally, the Applicant argues against Ford et al. More specifically, the Applicant argues that in Ford et al., the “transmission lines are connected at all times to the camera” and that there is no provision for “storage of images at the location of the camera” and that “no converter is required”. The Applicant is reminded that the Examiner used Ford et al. in combination with Kamata et al. to reject Claims 1 and 21. The Ford et al. reference was used to teach the transmission of image signals from the camera assembly. In response to the Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

5. Regarding items 7 – 11 of Applicant's arguments, the Examiner has traversed the Applicant's arguments against the rejection of Claims 1 and 21; therefore, the arguments in items 7 – 11 are moot.

6. Regarding item 12, of the Applicant's arguments, the Applicant's arguments with respect to Claims 33 – 36 have been considered but are moot in view of the new ground(s) of rejection.

Specification

7. The substitute specification filed 18 August 2003, in conjunction with Amendment A (Paper 7, 18 August 2003), has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because it is not accompanied by a statement that the substitute specification includes no new matter and a marked up version of the substitute specification showing all the changes (including the matter being added to and the matter being deleted from) to the specification of

record. Also, numbering the paragraphs of the specification of record is not considered a change that must be shown pursuant to this paragraph.

8. Amendment A was found non-compliant (Paper No. 9, 7 October 2003) and, hence, was not entered. Therefore, all amendments to the specification made in Amendment A were also not entered and, hence, the objections to the specification made in the Non-Final Office Action still stand. For the Applicant's convenience, a listing and explanation of all the objections to the specification, including the objections made in the Non-Final Office Action and new objections in this Office Action, can be found below.

Objections To the Specification

9. A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because the legibility of the application papers renders it difficult to consider the application and to arrange the papers for printing or copying.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and (c). The Applicant is reminded to include a statement that no new matter has been added.

10. The disclosure is objected to because it contains embedded hyperlinks (Pages 3 and 9). Applicant is required to delete the embedded hyperlinks. See MPEP §608.01.

11. The disclosure is objected to because of the following informalities: inconsistency with the drawings. On page 23, lines 22 of the original specification, the battery charging circuit is

labeled with reference sign 1835, however, it is shown in figure 5 as reference sign 1833. Also on page 23, line 23 of the original specification, the battery is labeled with reference sign 181, however, it shown in figures 1 and 5 as reference sign 184.

Appropriate correction is required.

Drawings

12. The drawings are objected to because of an inconsistency regarding reference sign 1833 in figure 5. Page 23, line 22 of the original specification lists the battery charging circuit as reference sign 1835. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

13. **Claim 26** is objected to because of an antecedent basis problem. Claim 26 recites therein "first-converting RS-232" and "second-converting RS-232", however "RS-232" had not been introduced in base Claim 21 or previously in Claim 26. To overcome the objection, Claim 21 and/or 26 needs to introduce the concept of "RS-232" in a fashion similar to Claims 24 and 25.

14. **Claims 57 and 58** are objected to because their subject matter duplicates that of Claims 40 and 41, respectively and individually. Claims 57 and 58 are believed to dependent upon Claim 54; however, they currently depend from Claim 34.

Appropriate correction of both objections is required.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claims 1 – 5, 7, 21 – 25, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata et al. in view of Ford et al.

17. For **Claim 1**, Kamata et al. disclose, as shown in figures 2, 3, and 4 and as stated in columns 2 (lines 52 – 57), 3 (lines 15 – 26 and 47 – 67), and 4 (lines 1 – 43), a waterproof digital electronic camera system comprising:

a digital electronic camera (camera 6) having a digital electrical signal interface (signal receiving part 7) for downloading image information from the camera (camera 6; also see description A below for further explanation); and

a converter (inherent within the signal receiving part 7, see description B below) converting signals from the digital electrical signal interface (signal receiving part 7) to radiation signals (see description C below); and

an enclosure (waterproof case 1, figure 1, and 21, figure 3) hermetically sealing water and air tight (see arguments above) both the digital electronic camera (camera 6) and the converter (inherent with the signal receiving part 7), the enclosure (1 and 21) being transparent in at least an area of an optical lens (light transmission window 9, figure 1, and 24, figure 3) of the digital electronic camera (camera 6) so that pictures may be taken through the enclosure (1 and 21), and the enclosure further comprising an inner casing (the actual casing of the camera 6,

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clearly seen in figure 1) and an outer casing (waterproof case 1, figure 1, and 21, figure 3); said electronic camera (camera 6) being disposed within said inner casing (the actual casing of the camera 6, clearly seen in figure 1); said inner casing being disposed within said outer casing (the camera is disposed inside the waterproof case (1 and 21), hence, the inner casing is disposed within the outer casing).

Kamata et al. disclose a transparent light receiving window (24) in the enclosure (1 and 21) for receiving the wireless control signals from the wireless remote controller (26) so that the wireless control signals may be converted into radiation signals, by the converter, disposed within the electrical signal interface (signal receiving part 7). However, Kamata et al. do not disclose the a radiation signal output of the converter so that radiation signal containing image information are communicable exterior to the enclosure.

Ford et al. also disclose, as shown in figures 1 and 4, a waterproof camera system comprised of an enclosure (90) for enclosing a camera (82) and an electrical signal interface (84). As stated in column 2 (lines 34 – 37), a cable (12) is attached to the electrical signal interface (84), by means of the enclosure (90), so as to transmit image signals, generated by the camera (82), to a receiving end for display. Since all electrical signals are radiation signals, as described previously, Ford et al. teach communicating radiation signals containing image signals to the exterior of the enclosure (90). As stated in column 1 (lines 30 – 35), at the time the invention was made, one with ordinary skill in the art would have been motivated to communicate radiation signals containing image signals to the exterior of an enclosure housing a camera, as taught by Ford et al., through the transparent light receiving window (24) of the enclosure (21), as disclosed by Kamata et al., as a means to provide an underwater viewing

system capable of transmitting real-time images of the underwater scene to display. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have communicated radiation signals containing image signals to the exterior of an enclosure housing a camera, as taught by Ford et al., through the transparent light receiving window of the enclosure, as disclosed by Kamata et al.

18. For **Claim 21**, Kamata et al. disclose, as shown in figures 2, 3, and 4 and as stated in columns 2 (lines 52 – 57), 3 (lines 15 – 26 and 47 – 67), and 4 (lines 1 – 43), a method of communicating with a sealed digital electronic camera comprising:

hermitically housing (by means of waterproof case 1, figure 1, and 21, figure 3; see arguments above) a digital electronic camera (camera 6) having a digital electrical signal interface (signal receiving part 7) for downloading image information from the camera (camera 6; also see description A below for further explanation) in a double walled housing (the first wall is the actual casing of the camera 6, clearly seen in figure 1, and the second wall is the waterproof housing, 1 and 21) that is optically transparent in at least an area of a lens (light transmission window 9, figure 1, and 24, figure 3) of the digital electronic camera (camera 6) so that pictures may be taken through the housing (1 and 21):

converting signals (inherent within the signal receiving part 7, see description B below) from the digital electrical signal interface (signal receiving part 7) to radiation signals (see description C below); and

Kamata et al. disclose a transparent light receiving window (24) in the enclosure (1 and 21) for receiving the wireless control signals from the wireless remote controller (26) so that the wireless control signals may be converted into radiation signals, by the converter, disposed

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within the electrical signal interface (signal receiving part 7). However, Kamata et al. do not disclose a method for radiatively communicating the radiation signal through the housing.

Ford et al. also disclose, as shown in figures 1 and 4, a waterproof camera system comprised of a housing (90) for housing a camera (82) and an electrical signal interface (84). As stated in column 2 (lines 34 – 37), a cable (12) is attached to the electrical signal interface (84), by means of the housing (90), so as to transmit image signals, generated by the camera (82), to a receiving end for display. Since all electrical signals are radiation signals, as described previously, Ford et al. teach communicating radiation signals containing image signals to the exterior of the housing (90). As stated in column 1 (lines 30 – 35), at the time the invention was made, one with ordinary skill in the art would have been motivated to communicate radiation signals to the exterior of a housing for a camera, as taught by Ford et al., through the transparent light receiving window (24) of the housing (21), as disclosed by Kamata et al., as a means to provide an underwater viewing system capable of transmitting real-time images of the underwater scene to display. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have communicated radiation signals to the exterior of a housing for a camera, as taught by Ford et al., through the transparent light receiving window of the housing, as disclosed by Kamata et al.

Descriptions

A. The camera system of Kamata et al. is clearly shown in figure 3. The camera system is comprised of both the waterproof case (21) for enclosing the camera (6) and the wireless remote controller (23) for controlling the camera (6). The camera (6) is an electronic camera wherein

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the light received into the waterproof case (21), by means of the light transmitting window (24), is converted into an electrical signal and taped onto a video tape. The wireless remote controller (23) controls the camera (6), by means of the electrical signal interface (signal receiving part 7) located within the camera (6), so as to control the recording of the electrical signal onto the video tape. The video tape can be removed from the camera (6) to be viewed at a later time.

Therefore, the electronic camera (6) has an electrical signal interface (signal receiving part 7) for downloading image information from the camera (6).

B. A converter is inherent with the electrical signal interface (signal receiving part 7). The wireless control signal transmitted to the camera (6) from the wireless remote controller (23) is received by the electrical signal interface (signal receiving part 7) within the camera (6). If a converter were not present within the electrical signal interface (signal receiving part 7), it would be impossible to receive the wireless signals. A converter is an essential element in wireless transmitting and receiving circuits.

C. All electrical signals, in electronic circuits, are radiation signals and require special shielding as mandated by the Federal Communications Commissions. Therefore, the converter, as described above, does in fact convert the wireless signals received at the electrical signal interface (signal receiving part 7) into radiation signals, communicated by leads on a printed circuit board. Electrical signals, in electronic circuits, are not limited to the leads, designated for them on the printed circuit boards; rather they radiate away from their respective channels and cause interference and crosstalk in other channels.

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19. As for **Claims 2, 3, 22, and 23**, it has been established that Kamata et al. in view of Ford et al. teach a converter (inherent, as described above) for converting signals upon the digital electrical signal interface (signal receiving part 7) to radiation signals and wherein a light receiving window (22) is disposed within the enclosure/housing (1 and 21) so as to permit the passage of wireless control signals from the wireless remote controller (23). The Examiner interprets radiation signals to include all signals in the electromagnetic spectrum capable of becoming signals in an electronics circuit. Thus, radiation signals encompass optical frequency radiation signals and radio frequency radiation signals.

20. As for **Claims 4 and 24**, Kamata et al. in view of Ford et al. teach of a waterproof digital electronic camera system and method of operating thereof according to Claims 1 and 21, the combination is silent with respect to the digital electronic signal interface (signal receiving part 7) of said digital electronic camera (6) as specifically being a serial digital electronic interface. Official Notice is taken that both the concepts and advantages transmitting digital signals in either a parallel fashion or a serial fashion are well known and expected in the art. Thus, it would have been obvious to one of ordinary skill in the art to include a serial digital electrical interface in the digital electronic camera system of Kamata et al. in view of Ford et al. in order to transmit image information using a connection that using less space in the physical circuit architecture, a connection that is less prone to crosstalk at higher frequencies, a connection with a reduced clock skew between the different channels, and a connection that can be faster. Since, it is obvious to use a serial digital electrical interface, the converter must also handle signals in a serial fashion.

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21. As for **Claim 5 and 25**, it was shown to be obvious, by means of an Official Notice, to use a serial digital electrical interface, therefore, Official Notice is taken again that both the concepts and the advantages of using an RS-232 serial port are well known and expected in the art. Thus, it would have been obvious to one of ordinary skill in the art to include an RS-232 serial port to interface with the serial digital electrical interface in the digital electronic camera system of Kamata et al. in view of Ford et al. in order to transmit image information using a connection that using less space in the physical circuit architecture, a connection that is less prone to crosstalk at higher frequencies, a connection with a reduced clock skew between the different channels, and a connection that can be faster. Since, it is obvious to use a RS-232 serial port to interface with the serial digital electrical interface, the converter must also handle signals in a serial fashion using RS-232.

22. As for **Claims 7 and 27**, Kamata et al. disclose, as clearly shown in figure 3, that the camera system is comprised of both the waterproof case (21) for enclosing the camera (6) and the wireless remote controller (23) for controlling the camera (6). The camera (6) is an electronic camera wherein the light received into the waterproof case (21), by means of the light transmitting window (24), is converted into an electrical signal and taped onto a video tape. The wireless remote controller (23) controls the camera (6), by means of the electrical signal interface (signal receiving part 7) located within the camera (6), so as to control the recording of the electrical signal onto the video tape. The video tape can be removed from the camera (6) to be viewed at a later time. Therefore, the electronic camera (6) has an electrical signal interface (signal receiving part 7) for downloading image information from the camera (6).

Thus, although a shutter circuit for activating the shutter, to which a shutter circuit connection may be suitably made, is not explicitly disclosed by Kamata et al., a shutter whether mechanical or electronic is inherent to all cameras. Since, the wireless remote controller (23) is external to the enclosure (1 and 21) and is provided for controlling the camera (6), Kamata et al. also disclose a trigger circuit, also within the enclosure and electrically connected to the shutter circuit of the digital electronic camera (6), responsive to a stimulus external to the enclosure to produce an electrical signal responsively to which the shutter circuit will activate the shutter of the digital electronic camera (6).

23. **Claims 14 – 20 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata et al. in view of Ford et al. in further view of Fraker et al.

24. As for **Claim 14**, Kamata et al. in view of Ford et al. teach in combination of a waterproof digital electronic camera according to the requirements in claim 1, however, the combination is silent with respect to the potting of the camera (6) and converter (inherent within the signal receiving part 7) in an optically clear dielectric material.

Fraker et al., however, teaches, as stated in column 3 (lines 4 – 40), the potting (encapsulation) of a camera system and its components in a clear dielectric material (plastic material). As stated in column 1 (lines 28 – 31), at the time the invention was made, one with ordinary skill in the art would have been motivated to apply the teaching of potting a camera and its components in a clear dielectric material, as taught by Fraker et al., to the waterproof digital electronic camera system, of Kamata et al. in view of Ford et al., as a means to house the camera so that it is adequately protected against shock and certain chemical environments. Thus, at the

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time the invention was made, it would have been obvious to one with ordinary skill in the art to apply the teaching of potting a camera and its components in a clear dielectric material, as taught by Fraker et al., to the waterproof digital electronic camera system, of Kamata et al. in view of Ford et al.

25. As for **Claims 15 and 16**, Fraker et al. teach, as stated in column 3 (lines 4 – 40), that the potting material is a plastic material such as urethane, silicone, polystyrene, etc. The Examiner interprets a plastic material as consisting essentially of both plastic and polycarbonate plastic groups. The motivation to include Fraker et al. can be found in the rejection of Claim 14.

26. As for **Claims 17 and 18**, Fraker et al. disclose, as stated in column 3 (lines 4 – 12), the potting fills all of the interior space of the housing surrounding the camera components. Thus, Fraker et al. disclose that the enclosure contains only solid and liquid masses and there is essentially no gas whatsoever within the enclosure. The motivation to include Fraker et al. can be found in the rejection of Claim 14.

27. As for **Claims 19 and 32**, it has been established that Fraker et al. disclose the potting (encapsulation) of a camera system and its components in a clear dielectric material (plastic material), wherein the potting material is a plastic material such as urethane, silicone, polystyrene, etc. Since, the potting material is a clear dielectric that can be a solid or a fluid, it would have to be non-interfering with optical communication and electrical communication within and through the enclosure, otherwise, the potting material would not qualify as a clear dielectric and would fail even system of Fraker et al. The motivation to include Fraker et al. can be found in the rejection of Claim 14.

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28. As for **Claim 20**, the Examiner interprets the variation of the dielectric material and its physical state (either solid, liquid or fluid) as a variation to rejected Claim 17. Thus, the type of dielectric material that is used is interpreted as a matter of design choice.

29. **Claims 33 – 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraker et al. in view of Wood.

30. For **Claim 33**, Fraker et al. disclose, as shown in figures 1 and 5 and as stated in column 3 (lines 4 – 40), a digital electronic camera (11, 13, and 16) characterized in that the optics (13 and 16) and electronics (11) of the camera are permanently within a solid mass of optically clear dielectric material (plastic material) and the camera contains essentially not gases whatsoever (all the interior space of a housing encapsulating the camera and its components is filled with the plastic material, see column 3); wherein the camera (11, 13, and 16) may be suitably immersed to a depth in the ocean without crushing .

Fraker et al. do not disclose wherein a depth of at least a mile within the ocean. Wood also discloses a camera that may be suitably immersed in the ocean without crushing. As shown in figure 1 and as stated in column 2 (lines 32 – 45), Wood discloses an underwater carrier vehicle (10) comprised of a camera wherein the carrier vehicle may be submersed to a depth of 30,000 feet. As stated in column 1 (lines 13 – 15), at the time the invention was made, one with ordinary skill in the art would have been motivated to apply the teaching of submerging a camera to a depth of 30,000 feet in the ocean, of Wood, to the digital camera, of Fraker et al., as a means to view the bottom of the sea. Therefore, at the time the invention was made, it would have been

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obvious to one with ordinary skill in the art to have applied the teaching of submerging a camera to a depth of 30,000 feet in the ocean, of Wood, to the digital camera, of Fraker et al.

31. As for **Claim 34**, Fraker et al. disclose, as stated in column 3, that the camera is potted inside and out in a solid block of said optically clear dielectric.

32. As for **Claim 35**, Fraker et al. disclose, as stated in column 3, that the camera is potted in a solid block of plastic.

33. As for **Claim 36**, Fraker et al. disclose, as stated in column 3, that the camera is potted in a solid block of polycarbonate.

34. As for **Claim 37**, Fraker et al. disclose, as stated in column 3, that the camera is potted in an encapsulate material filling all the interior space surrounding the camera components, thus, Fraker et al. disclose that the camera is within a an optically clear dielectric material (silicone), the camera and its liquid being held with a liquid-tight exterior case (12) that is itself optically clear in at least a region where an image is received through the case and into a lens (13) of the camera. There is a lens cover (15) covering the lens (13). The lens cover (15) together with the exterior case (12) encapsulates the camera and all of its components.

35. As for **Claim 38**, the Examiner interprets the variation of the dielectric material and its physical state (either solid, liquid or fluid) as a variation to rejected Claims 34 – 36. Thus, the type of dielectric material that is used is interpreted as a matter of design choice.

Allowable Subject Matter

13. **Claims 6, 8 – 13, 26, 28 – 31, and 39 – 41** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As for **Claims 6 and 26**, the prior art discloses a waterproof digital electronic camera system as in Claims 1, 4, and 5. However, the prior art does not teach or fairly suggest a RS-232 to TTL signal converter or an encoder-decoder converting the TTL signals to optical signals, and an electrical-optical signal converter for transmitting the optical signals through a transparent area of the enclosure.

As for **Claims 8, 9, 28, and 29**, the prior art discloses a waterproof digital electronic camera system as in Claims 1, 7, 21, and 24. However, the prior art does not teach or fairly suggest a waterproof digital electronic camera system including the specifics of trigger circuitry including a Hall-effect sensor and a reed switch.

As for **Claims 10 and 30**, the prior art discloses a waterproof digital electronic camera system as in Claim 1. However, the prior art does not teach or fairly suggest a rechargeable power source for providing power to the digital electronic camera and a charging circuit for converting stimuli external to the enclosure to a power suitable to recharge the rechargeable power source.

As for **Claims 39 – 41**, the prior art discloses a digital camera system as in Claims 33 and 34. However, the prior art does not teach or fairly suggest the communication of image data from the camera to the exterior of the solid mass via an optical link, a magnetic link, or an inductive coupling.

36. **Claims 42 – 56** are allowed.

The following is a statement of reasons for the indication of allowable subject matter:
Claims 42, 50, and 54 at the very minimum recite therein at least some of the limitations recited in some of the Claims objected to above.

Conclusion

37. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The Examiner can normally be reached on Monday - Thursday from 7:30 AM to 5:30 PM and on alternating Friday from 7:30 AM to 4:30 PM.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703.306.0377.

JPM
January 26, 2004



NGOC-YEN VU
PRIMARY EXAMINER